SUPER SKETCH™

OWNER'S MANUAL

PERSONAL PERIPHERALS, INC.
PPI

SKETCH MASTER™

Software For Either TI99/4A or Colecovision

A delightful new way of interacting with your computer to design detailed and colorful images. Designed for use by all ages.

Your SUPER SKETCH™ package contains:

- 1 SUPER SKETCH™ graphics tablet attached to SKETCH MASTER™ software cartridge
- 1 Instruction Booklet
- 1 STARTER KIT with drawings to trace

Developed By: Personal Peripherals, Inc., Irving, Texas

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Introduction

Congratulations! You are now in possession of an extremely versatile and easy-to-use computer graphics products available for your home computer. Super Sketch gives you the ability to create super video graphics without years of programming experience. In fact, you will be able to produce beautiful graphics immediately.

Creating "Computer Generated Graphics" onto a video screen has been possible for a number of years. The ability to do so in the past, however, has required advanced programming skills in conjunction with very expensive equipment.

Your Super Sketch graphics tablet is a highly sophisticated sensing device that electronically senses the movement of the control arm and translates that movement to your video screen. With the software included and easy push button control, there is virtually no limit to the image you can create on the video screen. There is no programming involved and all menu commands are included in the software cartridge. The capabilities of Super Sketch equal that of graphics terminals that cost $50,000 or more only 15 years ago.

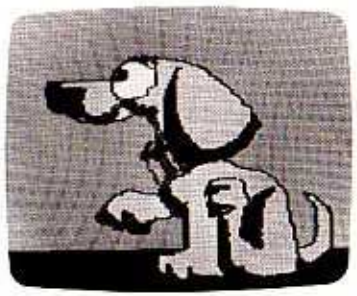
The objective of this manual is to explain the many capabilities of Super Sketch, and how to utilize them. You will quickly realize that Super Sketch can be easily learned by children to perform very simple yet beautiful graphics. As you read on, however, you will see that there are many more advanced capabilities that will fascinate even the most advanced artists.

SPECIAL NOTE:

This manual refers both to the use of Super Sketch Model G2500 for the Colecovision game computer and Model G2400 for the TI 99/4A home computer. Be sure that you are using only that model of tablet and software which is compatible with your computer. Most of the feature descriptions within this manual apply equally to both the TI99/4A and the Colecovision. Any differences will be specially marked to avoid any confusion. The graphic on the front cover of this manual was created using Super Sketch on the Commodore 64 computer with the applicable software.

Introduction

INTRODUCTION TO COMPUTERS

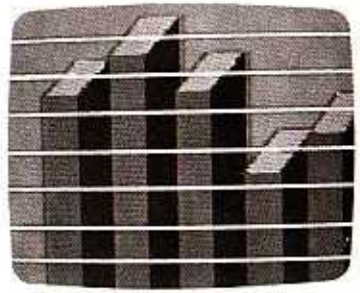


Super Sketch is a fun device for either child or adult. In addition, it provides the easiest possible introduction into the use of a computer. Its menu-driven command system provides an intuitive method of operation that is easy to learn for the first-time computer user.

ART AND DESIGN

Super Sketch provides the lowest cost introduction to the world of computer graphics. It is an excellent new medium for the artist and a design vehicle for many graphics applications.

BUSINESS APPLICATIONS



All businesses eventually utilize visual aids in presentations. These include bar charts, pie charts, as well as various graphs and sketches. Super Sketch is the ideal tool for generating these visual aids.

Setting Up

Setting up to draw with the Super Sketch is as simple as using any game cartridge with your computer, only that there is a graphics tablet attached to the cartridge. Your box should contain the Super Sketch graphics tablet attached to the software cartridge, a white envelope labelled "Starter Kit", this instruction book, and a warranty card. The software included in this package is identified as "SKETCH MASTER" which is a trade name that will be referenced throughout the manual.

The box itself is designed to be a permanent storage tray for your Super Sketch. Returning the warranty card will put your name on our mailing list for information on new Super Sketch software and other products for your computer from Personal Peripherals.

SETTING UP for TI 99/4A

If you own Super Sketch Model G2400 for the TI 99/4A, follow these simple instructions for inserting the graphics tablet and software cartridge. If you encounter any problem while setting up, please see the "Trouble Shooting" section of this booklet.

Inserting the Cartridge

1. If you have been programming, save your data before inserting a cartridge and then turn the power off.
2. Slide the cartridge into the slot on the console.
3. Turn on the computer and wait for the master title screen.
4. Press any key to make the master title screen disappear.

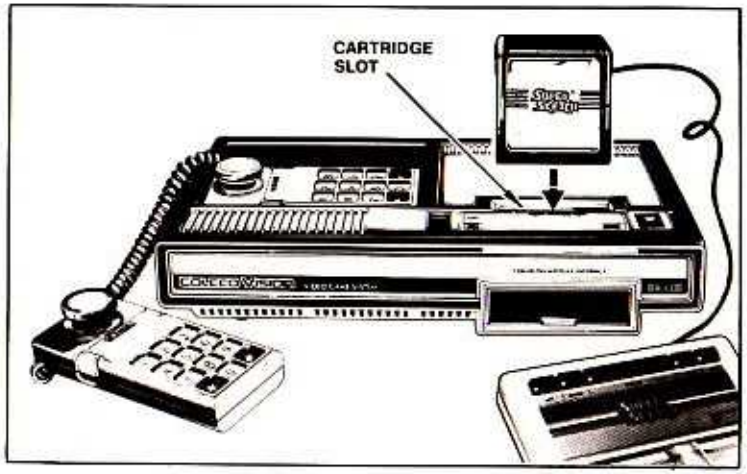
–Note: Super Sketch will not work with the 1983 Monitor 99/4A

5. Press the numeric key indicated to select the Super Sketch program and the Super Sketch title screen will appear.

Removing the Cartridge:

1. To remove the cartridge press QUIT to return to the master title screen.
2. Remove the cartridge from the slot. (Note: Do not pull cable to remove cartridge.)

Setting Up



SETTING UP FOR COLECOVISION™

If you own Super Sketch Model G2500 for the Colecovision™ game computer follow these simple instructions for setting up the software cartridge and graphics tablet. If you have any problems please refer to the TROUBLESHOOTING section of this booklet.

1. Before inserting or removing SUPER SKETCH, **always make sure that the POWER SWITCH on Colecovision™ is turned OFF.**
2. Hold the SKETCH MASTER software cartridge (attached by a card to the Super Sketch graphics tablet) so that the name of the game is facing you and reads right side up.
3. Carefully insert the cartridge into the slot on the right side of the console as shown in the diagram until firmly seated.
   NOTE: when removing SUPERSKETCH, **turn the power switch to off,** then simply pull the cartridge straight up and out of the slot.
4. The SUPER SKETCH title screen should appear when the console power switch is turned ON. If not, press the "RESET" key on the right of the Colecovision™and the title screen should appear.

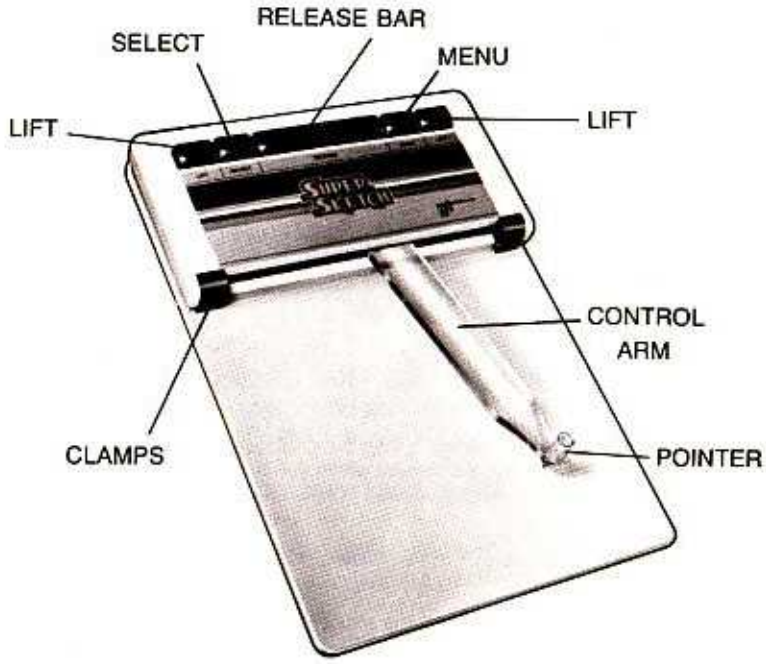
NOTE: Your T.V. set must be turned on and the ANTENNA Switch Box set for COMPUTER GAME for operation to occur.

A Tour Of Your Tablet

Your Super Sketch Graphics Tablet is your entry point into the wonderful world of computer art. It is a precision tool which can accurately read and translate your commands through a control arm which determines position, and four buttons which can be used to control the system. The following describes the purpose of the different parts on your tablet.

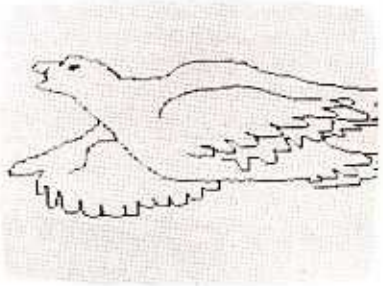
- RELEASE — The long bar in the center simply lifts the paper clamps on each side of the tablet to hold a paper sheet either for drawing or tracing.
- LIFT — There are two lift keys (On one side for the convenience of left-handed people, and another on the opposite side for right-handed people). This button, when pushed, allows you to move the control arm without drawing on the screen or to escape the menu and return to the drawing.
- MENU — When the MENU key is pressed, any current activity will stop and the main menu will appear on the left side of the screen. The menu is a list of commands and colors that will be used while you draw.
- SELECT — The button marked SELECT tells the computer to select that command or color while in the menu mode. The selection is made by first placing the arrow next to the feature desired and then pressing SELECT. To return to the drawing after selecting a feature, press the LIFT button. SELECT is also used to tell the computer to do the currently selected feature while in the drawing mode.
- CONTROL ARM and POINTER — The control arm moves the pen holder around the tablet. The computer knows exactly where this pointer is at all times and this is your drawing utensil for all functions. You can place a pencil or other drawing utensil through the pen holder.

A Tour Of Your Tablet



Your Fist Picture

A "Starter Kit" is included with your Super Sketch in order to aid you in getting started on your first drawings. This is a collection of line drawings that can easily be clamped onto the drawing area by using the RELEASE bar. There are six drawings of various difficulty included in this kit. Bluebird is the simplest and will be used for this first lesson.



STARTING TO DRAW

1. Holding the RELEASE bar down, slide the Bluebird sketch under the CONTROL ARM and then the paper clamps.
2. Turn on the computer by switching the power switch to on. The Super Sketch title screen should appear when you have followed the instructions in the previous section called "SETTING UP" for your particular computer.
3. Depress the MENU key. The title screen will be replaced with your drawing screen.

   Note that the color bordering the screen is blue. This is referred to as the "current color" and indicates the color that you will be drawing with.

Since the SKETCH MASTER software automatically starts with the color blue as the current color and is in the DRAW mode, there are no other selections needed at this time to draw the Bluebird.

4. Simply hold down the LIFT key to remove the menu from the screen. While holding down the LIFT button, position the pointer of the control arm over the outline.
5. Now release the LIFT button and trace the outline of the bird with the pointer. As you trace, the outline drawing of the bird will appear on the television screen.

Your First Picture

WHAT IS A CURSOR?

While you are drawing, there is a small symbol on the screen that you should note. The spot on the screen where you are drawing is designated by a "cursor." This is the small symbol that gently flashes to indicate where the line to be drawn will start. There is also a "d" indicating that you are in the DRAW mode. Different letters will accompany the cursor based on the currently active mode of operation.

COLOR THE BLUEBIRD

After you have made the complete outline of the bird, make sure that the two ends of the blue lines meet.

1. Depress the MENU key to view the available selections. The main menu will appear on the left side of the screen again.
2. Select a different blue color to paint the bird by moving the menu arrow next to the desired color and depressing the "SELECT" key.
3. Using the control arm, locate the flashing arrow at FILL. Do not worry about moving the pointer when in the menu mode. No drawing activity occurs in this mode.
4. While pointing at FILL, press the SELECT key. The area around the word FILL should turn from grey to red.
5. Now press the LIFT key to exit from the menu mode.
6. Position the cursor (now designated with "f") anywhere within the area enclosed by the blue lines.
7. Press the SELECT key on your graphics pad to tell the computer to start filling at the location of the cursor. You will see the bird appear in brilliant blue on the screen.

The Main Menu

The menu provided by your Sketch Master software is your gateway to all the special features and functions that are a part of this advanced software package. With your computer and Super Sketch in operation, press the MENU button and we will go through each of the commands. Pressing the MENU at any time while you are working will stop whatever is currently happening and return you to this MENU mode.

COLORS

As the Super Sketch comes on, it automatically draws blue, the same blue as the border. When you choose a new color the border color will also change. In the menu there are 15 different colors including various shades of red, blue, yellow and green. Any of these fifteen colors or shades can be chosen while in the menu mode by:

- Move the control arm and watch the arrow move along the right border of the menu.
- When the arrow points to the color you desire, just press the SELECT button.
- The border of the screen will turn to that color; and when you draw a line, it will be that color.

The Main Menu

CLEAR

Clear allows you to erase an entire screen. To clean your working area for a new drawing:

- Enter menu mode by depressing the MENU key.
- Move the arrow to CLEAR and press SELECT. Note that the area around CLEAR will change color but nothing else happens. This is a safety feature of the Sketch Master software that reduces the possibility of accidentally erasing your latest artistic creation.
- The screen will not be cleared until CLEAR is selected and LIFT is pressed.
- At that time it will completely clear the screen almost instantly.

DRAW

DRAW is the normal mode of operation as discussed earlier. It allows freehand drawing or tracing with the currently selected color, brush style, and texture. To select DRAW:

- Make sure you have selected the color, the brush, and texture with which you wish to draw.
- Move the menu arrow to the word "DRAW" and press the SELECT key.
- Press LIFT and keep holding it to exit the menu mode and prepare to draw.
- Position the cursor before you release the LIFT key. When it is released, a line will be drawn on the screen as the control arm is moved on the pad.

In order to move the pointer without drawing a line, simply depress and hold down the LIFT key. This is similar to lifting a paintbrush off the canvass when you want to start drawing elsewhere. When the cursor has been repositioned, release the LIFT key to draw again.

SWAP

The purpose of the SWAP command is to change any color on your drawing or pattern to any other color you may desire. It will change the visible color immediately beneath your cursor in every location of the screen to the current color. As an example, if you have drawn a red apple, you could use this command to quickly change it to green.

- Position the arrow next to the word SWAP and press SELECT.
- Make sure you have selected the color you wish as the new color or select it now by moving the arrow to that color and pressing SELECT again.
- Press LIFT to exit the menu and prepare to swap colors.
- Position the cursor over the color you wish to change.
- Press the SELECT key here and the color will change to the current color.

FILL

The purpose of FILL is to automatically paint the area bounded by drawn borders with a preselected color.

- Before filling, select the color and texture from the menu that you wish to use as the filler.
- Move the arrow to FILL and press the SELECT key.
- Return to the picture by pressing LIFT.
- Position the fill cursor within the area to be filled.
- Press the SELECT key to begin filling at this location.
- You may stop the fill at any time by pressing one of the buttons on your graphics pad. To return to the menu, simply press the MENU key.

ERASER

Think of the ERASER command as your pencil eraser. If you have something on the screen that needs small changes:

- While in menu mode, move the arrow adjacent to ERASER and push the SELECT button.
- Push and hold down the LIFT button. You will see your cursor on the screen with an "e" indicating that you are in the erase mode.
- When you release this button the area under the cursor will be erased, that is, it will be returned to background color.

EXPERT

- When you align the arrow with EXPERT and push SELECT, a new set of command features become available. These funcitons will be described in the Expert Menu section.

SHOW

After you have completed a drawing or business graphic, you may want to display the entire drawing without menu, or cursor. This is the purpose of the SHOW command. When you select this command, everything disappears from the screen except your drawing. You can return to the draw mode by pressing any key on your pad.

TEXTURE

At the bottom of the color pallet, below the color Black, is a symbol which looks somewhat like a checkerboard. This feature is referred to as "TEXTURE". Selecting texture allows you to draw or fill with a checkerboard pattern which is made up of your currently selected color and the background color. Due to the way this appears on your screen, this feature offers you a way of creating 15 new colors from the solid colors available. As well, this feature offers you a way to add depth (texture) to your drawings.

To use this feature:

- Move the control arm until the menu arrow is pointing at the TEXTURE symbol.
- Press and release the SELECT Key. Your currently selected color will be shown on the color pallette with the texture over it as an example of what you will be drawing.
- If you would like to SELECT a different color now, the texture example will move to the selected color bar.
- To Draw or Fill with your TEXTURE simply select the drawing function desired and then press LIFT to exit the menu mode.
- To return to Solid Colors simply select a color on return to menu mode.

Brush Menu

BRUSH

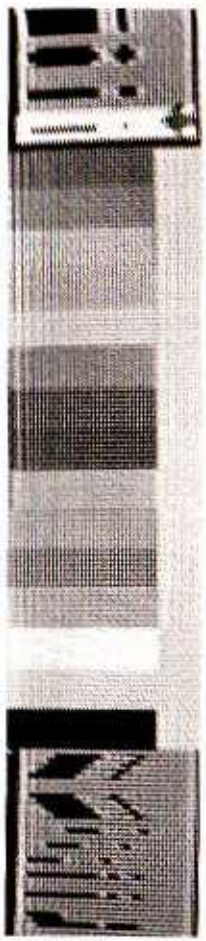
When you first started drawing with Super Sketch you found that a thin line was drawn everywhere the cursor was moved. This is the standard fine point brush which is defined as a small dot. The BRUSH feature allows you to select from nine standard brush patterns. This is similar to an artist utilizing different size paint brushes while painting.

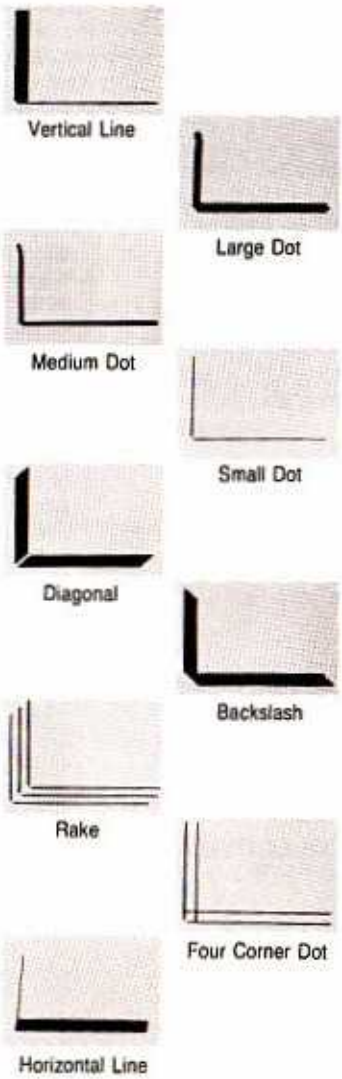
When you Select BRUSH on the main menu a completely new brush menu will appear as shown in the diagram. You will notice that the color pallette is still available if you wish to select a new color. Selecting a brush is as simple as selecting a new color:

- Move the menu arrow to point to the desired brush.
- Press and release SELECT to choose this brush. The selected brush will be highlighted.
- To DRAW with this brush simply press and hold the LIFT key to exit the menu and begin drawing.
- To return the main menu, press and release MENU.

Brush Menu

EXAMPLES OF STANDARD BRUSH STROKES





Expert Menu

When you align the arrow with EXPERT and push the SELECT button, a complete new menu of advanced functions is available to you. These functions will be described in the following section.

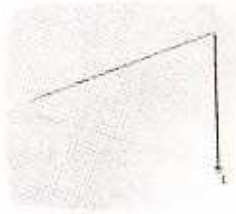
TI 99/4A

LINES

The LINES command lets you draw one or a series of straight lines between points you choose. To use this command:

- Place the arrow adjacent to LINES and push SELECT.
- You can begin drawing by pushing the LIFT button.
- While holding the LIFT depressed, place the cursor (now showing "I" for lines) at your desired starting point.
- Release the LIFT button and move the control arm and cursor to the desired opposite end of the line. Notice that a flashing line constantly goes between the starting point and the position of your cursor. This line indicates the location of the final line and can be moved only by moving the cursor.
- The line becomes a part of your drawing when you press SELECT.
- To form a line from the termination of the first line to a new point, simply move the cursor to the new point.
- To start a line from a new starting point, press LIFT as you go to the new starting point.
- To draw continuously, (as in DRAW mode) hold down SELECT while moving pen.

COLECOVISION



Expert Menu

RAYS

The RAYS command produces a number of lines starting from one starting point. For this command:

- Place the cursor to the desired center point and then release the LIFT button.
- Now move the cursor to the desired location for the first line. Again, a flashing line will show where your line will be.
- At the desired location press SELECT and that line will become a part of the drawing.
- Now move the cursor to the next desired location and repeat until the desired pattern is completed. LIFT allows relocation of the starting point. Note that if you hold the SELECT key down while moving the control arm, that an interesting pattern will emerge.

H OR V

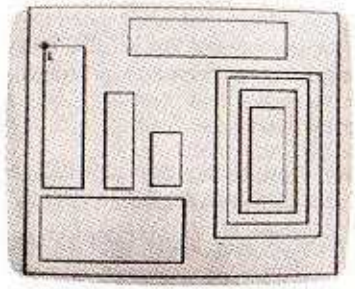
H OR V command will draw horizontal and vertical lines on the screen. This operates in a fashion very similar to RAYS.

- After selecting H OR V, you press LIFT to return to the drawing screen.
- While keeping LIFT depressed, move the cursor to the starting point of your line.
- Release LIFT and move the cursor vertically or horizontally until the line is the desired length. The flashing line indicates the position of the line. It will only be vertical or horizontal depending on the relative position of the cursor.
- Press SELECT to make the line become a part of the drawing.
- Use LIFT to relocate starting point.

BOX

BOX uses a combination of horizontal and vertical lines to form a rectangle.

- As in RAYS, the LIFT button is kept depressed until the cursor is at one corner of the desired rectangle.
- Release the LIFT button and move the cursor to the diagonally opposite corner.
- A flashing line indicates the location of the rectangle.
- It will become a part of the drawing when the SELECT button is pressed.
- Use LIFT to relocate starting point.



PICTURE STORAGE

The Colecovision™ is a game computer which was not designed to accomodate other computer peripherals such as floppy disk drives, cassette decks or printers. Therefore the following commands are not found on the SUPER SKETCH Model G2500.

SAVE (For TI 99/4A only)

The SAVE command allows you to save your pictures on a cassette recorder just like you might do with your BASIC PROGRAMS. The same connections between the cassette recorder and your TI 99/4A must be made as if you were going to store a program.

To use this command:

- Move the menu arrow to SAVE and press the SELECT key followed by depressing the LIFT key.
- The computer will ask "IS TAPE SET?"
  In response to this:
  - Make sure the tape is rewound to the proper starting position.
  - Lock PLAY and RECORD on your cassette deck
- Press SELECT to activate SAVE.

NOTE: It will take approximately 3 minutes to save your picture to tape.

- After picture is saved, you will be returned to the main menu automatically and the cassette motor will turn off.

LOAD (For TI 99/4A only)

The LOAD command allows you to retrieve your stored pictures from cassette tapes. To use this command:

- Move the menu arrow to LOAD, press and release SELECT, and then depress LIFT.
- The computer will then ask "IS TAPE SET?"
  In response to this:
  - Make sure the tape is rewound to the desired starting position.
  - Lock the PLAY key **only** on your cassette recorder.
  - Make sure the volume setting is at least at 7 or higher on your cassette recorder.
- Press SELECT to activate LOAD.
  While the picture is loading you will see first patterns appear on your screen and finally your colors will appear.
- After the picture is loaded, you will automatically be returned to main menu and the cassette motor will turn off.

Expert Menu

RW-FF (For TI 99/4A only)

Your computer controls the motor on the cassette deck. When it is not Loading or Saving, the cassette motor is off, therefore the pushbuttons will not operate the recorder. "RW-FF" gives you control of your cassette recorder by commanding the computer to turn on the cassette deck motor. This will allow you to manually rewind or fast-forward your tape to select starting positions. To use this command:

- Select RW-FF by moving the menu arrow to the command followed by depressing the SELECT Key.
- To activate RW-FF depress and release the LIFT key. The menu arrow will disappear indicating that the motor is active.
- You may now perform any cassette operations you desire.
- When ready to return to your picture, press and release the SELECT key. You will be returned to the expert menu.

TAPE STORATE HINTS

You will probably want to catalog your stored pictures on the pages provided at the back of this manual so that you may quickly find them at a later date. When you start using a tape, rewind it completely. When the recorder has finished rewinding, press STOP and then reset the tape counter to 0's. This will synchronize the counter to this tape.

As you save pictures note the count when you start the SAVE and when you finish. Place these counts on your catalog as shown in the following example:

TAPE NO.	PICTURE NAME	COUNT START	COUNT END
1	TREES	000	036
1	BLUEBIRD	050	088

...etc.

Drawing Hints

USING THE "STARTER KIT"

Not all of us are artistically creative. Super Sketch is designed so that you can trace from drawings in the Starter Kit and other sources such as magazines and coloring books. The Starter Kit contains six line drawings that were made specially for use with your Super Sketch. These drawings include the Bluebird that was discussed earlier, the Island, Rover, Cottage, and two others. These drawings were chosen to provide a starting point for your own creativity and as a training vehicle for some of the special features of the Sketch Master software package.

Bluebird was discussed earlier as the first drawing to select. You can make a blue outline of the bird and then fill with another blue. Then you can add some special touches. First, using black, draw detail in the wings and the tail to make your sketch look more like the drawing. Now, if the bluebird does not appeal to you, let's try a cardinal. Select the proper shade of red, select SWAP, then press LIFT to return to the screen. Position the cursor anywhere over the blue area and press SELECT. Your bluebird will become a cardinal.

Cottage requires use of the EXPERT functions. First create the Wall, Door, and Window by using a thin brush and the BOX command. After selecting BOX, move the control arm pointer to a corner of the wall and release the LIFT key. This sets the corner of the wall on the screen as well. Now move the pointer to opposite corner of the wall and then press SELECT. Your wall will immediately be drawn. The same process can be used for the door and window. The "LINES" command or "H or V" might be used for the fence and roof. Afterwards trace the landscape and then paint your picture by using the FILL.

Drawing Hints

TRACING FROM OTHER SOURCES

It is easy for the non-artistic person to get support from other sources to make a sketch of difficult subjects. For example, very few people can draw a graceful horse without any aids. If, however, we find a picture of a horse in some magazine we can trace the horse outline onto the screen. Using other commands we can FILL the horse, then add darker shading in the shadows and then create a background. We can then experiment with adding a rider, perhaps a jockey in multicolor silks and maybe a fence in the foreground.

PHOTOGRAPHING HINTS

Photographing your creations is an excellent way of permanently saving them for all to see. Also it gives you the ability to blow them up to any size that you desire. Fine artists may choose to perform final touch-up directly on the photo print for special effects.

You may want to experiment with different techniques, but the guidelines you should keep in mind at first are as follows:

- Use a tripod for stability.
- For color photographs, use Kodachrome 64 for slides and Kodacolor II for prints.
- Shutter speed should be 1/30 of a second or longer. You may wish to bracket at other settings.
- The room in which you are located should be totally darkened to prevent problems from reflections.
- Expect slight distortions due to a curved video screen.

Troubleshooting

TROUBLESHOOTING GUIDE

The Super Sketch Graphics tablet and software used in conjunction with your computer and video screen is a very complex system containing the equivalent of several hundred thousand transistors and thousands of other components. Twenty years ago, this much equipment would have occupied a large room and consumed as much power as a small factory. Also, a large team of technicians was required to maintain that much equipment.

In systems of this complexity, it is no surprise that problems can occur. The purpose of this section is to provide some guidance as to where to look in case of trouble. If you believe you are having problems with picture clarity or color, please read "Understanding How Your Computer and Television Work Together," which immediately follows. For other problems, simply scan down the list on the left hand side of the page until you come to the one that describes your problem. From there you follow through the steps and suggestions to isolate and possibly repair the problem.

MAKE SURE THAT COMPUTER AND TV ARE OPERATING	If there are problems when you first turn your Super Sketch on, make sure that the computer, and TV are operating properly without the Super Sketch cartridge plugged in. If it does not operate properly as a computer then fix this problem first.

....continued

SUPER SKETCH LOGO DOES NOT APPEAR WHEN TURNED ON	Software cartridge is not properly plugged in. Turn off switch and make sure that cartridge is properly seated in socket. If still not operating check system with another cartridge. Check Antenna Box and make sure the switch is set to COMPUTER (or GAME). Make sure that the computer cable is plugged into your switch box securely and that the antenna leads are properly attached to the TV. Check that the TV set is either on Channel 3 or 4 depending on how you have set the corresponding switch on your computer. If Super Sketch cartridge is defective return to dealer.
OTHER DEFECTS IN GRAPHICS TABLET OR CARTRIDGE	For other defects in the graphics tablet or cartridge please return to dealer for replacement.

UNDERSTANDING HOW YOUR COMPUTER AND TELEVISION WORK TOGETHER

In forming characters and graphics on the television screen, the computer generates small squares of light on the TV screen called "pixels." The TI 99/4A and Colecovision both generate 256 pixels across the television screen horizontally and 192 pixels in a vertical line.

There are several distortions and built-in limitations that keep things we draw on the screen from being faithful reproductions of what is copied or drawn on the Super Sketch. The first problem is linearity — the lines on the television screen are sometimes not evenly spaced. For example, a large circle created by Super Sketch on the screen may have a slightly flattened side, or a square box on the pad may be taller or wider on the screen.

Another problem has to do with generating small dots or vertical lines in color. Even the best TV set or color monitor is sometimes not able to reproduce the right color on a single pixel or a line that is a pixel width. The result may be a variation in color or the wrong color reproduced in these very small areas. However, large areas should hold true to the color you select.

There are other limitations built into both the TI 99/4A and Colecovision that affect their color graphic abilities. Only 2 colors are allowed in each group of 8 pixels horizontally. The resulting effect will be seen as "blocking" where a larger line is drawn than you originally planned. In reality this is not so severe a limitation as it might appear as you can plan for this limitation while drawing. The color pallette on the main menu is useful if you feel the colors need tuning. Adjust your fine tune controls until the picture is clear, the colors are distinct, and you are pleased with the color selection available.

Tape Storage Catalog

TAPE STORAGE CATALOG

TAPE NO.	PICTURE NAME	COUNT START	COUNT END